

# METHOD AND DEVICE FOR ADMINISTERING A MULTIPLICITY OF TERMINALS

CLAIM FOR PRIORITY

## 10 Technical Field of the Invention

## Background of the Invention

As data and telephone networks become fused together, a multiplicity of new terminals are suddenly invading the telecommunication market. Examples of this are the WAP (Wireless Access Protocol) terminals which 35 have already been introduced. The continuously increasing demand for greater bandwidths also provides for more and more services, for example also increasingly in the multimedia field.

Users are now contacting the services to which they subscribe not only by means of a single defined terminal, but use the entire variety of new terminals and the associated variety of access technologies. To  
5 this is added the fact that a user can simultaneously use a service via different terminals.

This results in a completely new class of applications which are set up for being activated by users from different types of terminals and which  
10 perform their services on any terminal of the user.

These applications make new demands on the network infrastructure. For example, an application should be informed about the type of terminal on which it is to perform its service for a user and how it can  
15 contact these terminals.

This is a new problem since, as a general rule, the application hitherto only had to be able to intercommunicate with a single terminal of this user. The application knew how it could interact with the  
20 terminal. If the application could not do this, there was no way of performing the service.

#### Summary of the Invention

In one embodiment of the invention, there is a  
25 method for administering terminals in communication networks which includes, for example, registering at least one terminal with a central registration entity, communicating at least one application with the at least one terminal, performing an inquiry at the  
30 central registration entity, and performing at least one action on the basis of the result of the inquiry.

In one aspect of the invention, the registering of the terminal with the central registration entity is not carried out by the terminal to be registered.

35 In another aspect of the invention, the registration information is updated.



terminals, and supplying a list of terminals is allocated to the user is supplied back to the application.

In one aspect of the invention, in the registration information, preferences relating to the terminals are specified as an order of priority in which individual terminals are to be addressed, data formats to transmit voice and/or data to the corresponding terminal, and transmission standards for the transmission.

In still another aspect of the invention, the application establishes contact with a number of terminals.

In the text which follows, the invention will be explained with reference to exemplary embodiments. In the figures:

Figure 2 shows a message flow by way of example.

## Detailed Description of the Preferred Embodiments

In one embodiment, there is a central entity for administering terminals of a user. The terminals of

the respective user register with this entity and leave information on the manner in which applications can interact with them and which methods of information exchange are supported by them (protocols, data exchange formats, address information).

Applications initiating an interaction with terminals inquire at the central entity via which terminals a certain user can be reached. As a result of the inquiry, the application (if it is authorized to receive this information) receives a list of the terminals of the user. This list includes address information and information on possible data exchange formats and protocols supported by the terminal for each terminal.

When a user uses a multiplicity of terminals and applications, certain characteristics (descriptions) of these terminals are administered by a central entity. Terminals register their address information and information on possible data exchange formats and protocols at the central entity, and keep this registration information updated.

Applications which intend to contact a user obtain information about the registered terminals of this user from the central entity.

Instead of terminals, other network elements can also handle the registration.

In mobile terminals, the position in a network (address) can vary with time and the access technology can also change when roaming into other network segments. Hence, registered information can also change dynamically. Thus, terminals need to keep their registration information updated.

On the basis of the information signaled back from the central entity, the application can decide whether and by which way it wants to contact the user in question. It selects the terminals in question in accordance with a suitable algorithm and addresses them. The algorithm can also take into consideration

settings by the user. These settings are also administered by the central entity and supplied to the applications.

Advantages of a central administration of  
5 terminals:

If there is no central administration of terminals, terminals will always have to register with all applications in question. This is very expensive since the number of applications to which a user has 10 subscribed can be very large. These registration mechanisms would have to be set up on every terminal of the user. In addition, each application provider would also have to implement mechanisms for registration which may be different for each type of terminal.

15           In the case of central administration, the  
central entity implements the registration interfaces.  
Terminals register precisely at this central entity  
known to them. At the same time, applications only need  
to support the interface to the central entity which  
20 can also be easily standardized.

In addition, preferences (e.g. in accordance with aspects of cost relating to the terminals with which the application is to communicate, can also be set up at the central administration (e.g. selection or 25 order of priority of the terminals, preferred data formats and transmission standards).

Figure 1 describes the system architecture for the central administration of terminals. It shows the central entity which can be located in any network, for example the Internet. Terminals A, B, C can register with the entity by means of a registration process, or also deregister. The applications 1, 2 can interrogate information on the registered terminals, for use with the application, from the central entity and then receive back, for example, a list of the registered terminals of a user, depending on the type of application.

Figure 2 shows an exemplary flow of messages between the central entity and the terminals, on the one hand, and the applications (for example services), on the other hand. The terminals register in a suitable manner at a central administration entity, for example with the type of terminal, the type of communication possible with this terminal, and other information. The registration can take place from the terminal itself or by a third entity.

As soon as an application (for example a service) requires information on terminals, it can interrogate the central entity for this information.

Figure 3 represents an exemplary application. A user N has a mobile telephone (terminal A from figure 1) which supports the short message service SMS (application 1), and a normal landline telephone (terminal B). The user N also uses a calendar application appointments calendar (application 2) in which he has entered at least one appointment.

The user N (or his/her mobile telephone, landline telephone terminals, respectively) are active and have registered with the central entity according to the invention in the network, Internet. This is stored, for example, in a table T and other solutions such as databases are known to the expert.

The calendar application monitors appointments and reminder times and informs the user N about when the appointment in question has approached. For this purpose, the application contacts the user.

The application then turns to the central entity 1 and obtains a list of terminals at which it can reach the user 2. From the list of terminals, the application determines which two terminals are registered. One is a mobile telephone which can be activated via the SMS or a voice link and the other one is a landline telephone for which a voice link can be used. In addition, the user can previously set his/her

